Space Weather Forecast

Issued on Wednesday, 01 February 2023 at 13:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: No significant geomagnetic activity expected. Slight chance of Moderate solar activity throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low, with several low-level common-class flares. There are six sunspot regions on the visible disc, all of which are small and magnetically simple. No Earth-directed coronal mass ejections have been identified on satellite imagery.

Solar Wind / Geomagnetic Activity: The solar wind parameters were indicative of the waning influence of a coronal hole high speed stream. Speeds fell from slightly elevated to background. Total magnetic field, was weak and on a declining trend, varying between weakly positive and negative. Geomagnetic activity was generally Quiet, with one Unsettled interval early in the period.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be mainly Low, with no significant sunspots on the visible disc and none due to rotate around from the farside of the Sun. There is a very slight chance of Moderate-class flaring based on the configurations of the visible regions.

Solar Wind / Geomagnetic Activity: A glancing coronal mass ejection may affect the Earth during 03 February, but with low confidence. The high speed stream from coronal hole 73 may connect during 02 February. Geomagnetic activity is expected to be mainly Quiet to Unsettled, with a slight chance of G1/Minor Storms on 02 and 03 February due to a coronal hole high speed stream and potential coronal mass ejection arrivals respectively.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	10	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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